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EXAMINER	
GRANT, ROBERT J	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/628,921	BREEN ET AL.	
	Examiner	Art Unit	
	Robert Grant	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8-5-05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *7 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-17 and 19-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7-29-03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury et al. (US 6,104,162) in view of Ostergaard et al. (US 5,994,878).

As to Claim 1, Sainsbury discloses a method for converting an alternating current (AC) input to a direct current (DC) output, the DC output providing power to a load, the method comprising: Receiving the alternative current (AC) input (Figure 3, element 11); Receiving a first feedback signal indicative of a target voltage required by the load (Column 5, lines 17-21); Receiving a second feedback signal indicative of the DC output (Column 5, lines 1-2); providing a controller module (Figure 5) included in an AC-DC adapter (Figure 3, element 22) and operable to receive the first feedback signal indicative to the target voltage (Column 5, lines 17-21) and the second feedback signal indicative of the DC output (Column 5, lines 1-2); and Generating the DC output responsive to the first and second feedback signals, wherein the DC output is maintained within a predefined range of the target voltage (Column 4, lines 62-66). Sainsbury does not expressly disclose wherein the predefined range includes a minimum value slightly above 100% of the target voltage and a maximum value slightly

below 125% of the target voltage. Ostergaard discloses (Figure 9) wherein the target voltage is the battery's end of charge voltage, and the voltage applied to the battery is keep within a predefined range above the target voltage (Column 21, lines 3-6). It would have been obvious to person having ordinary skill in the art at the time of this invention to combine the teachings of Ostergaard's battery charging methods with Sainsburys load sensing and responsive device, in order to constantly provide a voltage slightly higher than the battery's voltage therefore providing an efficient and rapid charge to the battery.

As to Claim 3, Sainsbury discloses the method of claim 1, wherein the second DC output provides power to the load, wherein the load is a battery (Figure 6, Element 41).

As to Claim 4, Sainsbury discloses the method of claim 3, wherein the DC output is suitable to charge the battery (Column 5, lines 59-62).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury (US 6,104,162) as applied to Claim 1 above, and further in view of Wilcox et al. (US 5,994,885).

As to Claim 2, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not disclose wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load. Wilcox discloses wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load (Column 4, line 30-33). It would

have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury's charger with Wilcox's design to adjust the charging parameters in this fashion to make up for any losses.

Claims 5, 6, and 8-11 are rejected under 35 U.S.C 103(a) as being unpatentable over Sainsbury (US 6,1,04,162) as applied to Claim 1 above, and further in view of Shyr et al. (US 5,903,764)

As to Claim 5, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein upon a loss of the first feedback signal the second DC output is maintained to a predefined voltage. Shyr discloses in column 1, lines 59-65, a smart battery which periodically responds to polling (i.e. feedback signals are not always present). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury method and utilize a smart battery as taught by Shyr, since periodically sending a feedback signal is more efficient.

As to Claim 6, see remarks for claim 5. A smart battery is capable of sending a signal indicating the voltage required and receiving that voltage back. If the signal is no longer present the battery will still be receiving that voltage.

As to Claim 8, Shyr discloses in column 1 lines 63-65 that the first feedback signal is received from the load.

As to Claim 9, Shyr discloses a smart battery, which would inherently have a controller for the gathering and transmitting the status and requirements of the battery.

As to Claim 10, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal, a digital signal superimposed on another analog signal, or an SMBus signal. Shyr expressly disclose Column 6, lines 60-65 wherein the first feedback signal is received as a SMBus signal.

As to Claim 11, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein the DC output is maintained at a predefined voltage upon completion of providing a charge to the load. Shyr expressly discloses figure 10a, element 374, wherein the DC output is maintained at a predefined voltage upon completion of providing a charge to the load (i.e. trickle charge).

Claim 12,14, and 15 are rejected under 35 U.S.C 103(a) as being unpatentable over Sainsbury (US 6,104,162) in view of Hatular (US 6,184,660) in further view of Ostergaard (US 5,994,878).

As to Claim 12, Sainsbury discloses an integrated alternating current (AC) to direct current (DC) adapter comprising: A rectifier module operable to receive an AC input and generate a first DC output (Figure 4, element 29), an AC-DC adapter (Figure 3, element 22); and a controller module (Figure 5) included in the AC-DC adapter (Figure 3, element 22). Sainsbury does not expressly disclose a buck converter module operable to receive the first DC output and generate a second DC output responsive to

a control signal; and a controller module operable to receive the first feedback signal input indicative of a target voltage required by a load and a second feedback signal input indicative of the second DC output, the controller adjusting the control signal responsive to the first and second feedback signal inputs, the adjusting of the control signal causing the buck converter module to maintain the second DC output to be within a predefined range of the target. Hatular expressly discloses the use of a buck converter (Figure 1A., Element 60) to supply power for charging a battery. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury's design by replacing his DC-DC converter with Hatular's buck converter. This replacement in Sainsbury's design would then yield: a buck converter module operable to receive the first DC output and generate a second DC output responsive to a control signal (Sainsbury: Column 5 lines 17-21); and a controller module included in the AC-DC adapter and operable to receive the first feedback signal input indicative of a target voltage required by a load (Hatular: Figure 1A, Element 50) and a second feedback signal input indicative of the second DC output (Sainsbury: Column 5 lines 1-2), the controller adjusting the control signal responsive to the first and second feedback signal inputs, the adjusting of the control signal causing the buck converter module to maintain the second DC output to be within a predefined range of the target (Sainsbury: Column 4, lines 62-66). Neither Sainsbury nor Hatular expressly disclose wherein the predefined range includes a minimum value slightly above 100% of the target voltage and a maximum value slightly below 125% of the target voltage. Ostergaard discloses (Figure 9) wherein the target voltage is the battery's end of charge

voltage, and the voltage applied to the battery is keep within a predefined range above the target voltage (Column 21, lines 3-6). It would have been obvious to person having ordinary skill in the art at the time of this invention to combine the teachings of Ostergaard's battery charging methods with Sainsbury's in view of Hatular's load sensing and responsive device, in order to constantly provide a voltage slightly higher than the battery's voltage therefore providing an efficient and rapid charge to the battery.

As to Claim 14, Sainsbury discloses wherein the second DC output provides power to the load, wherein the load is a battery (Figure 6, Element 41).

As to Claim 15, Sainsbury discloses the method of claim 14, wherein the second DC output is suitable to charge the battery (Column 5, lines 59-62).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular in view of Ostergaard as applied to claim 12 above, and further in view of Wilcox et al. (US 5,994,885).

As to Claim 13, Sainsbury, Hatular and Ostergaard disclose all the limitations of claim 12, as described above. However, Sainsbury, Hatular and Ostergaard do not disclose wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load. Wilcox discloses wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load (Column 4, line 30-33). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury, Hatular

and Ostergaard's charger with Wilcox's design to adjust the charging parameters in this fashion to make up for any losses.

Claim 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular in view of Ostergaard as applied to claim 12 above, and further in view of Shyr.

As to Claim 16, Sainsbury, Hatular and Ostergaard disclose all the limitations of claim 12, as described above. Neither Sainsbury nor Hatular nor Ostergaard expressly disclose wherein upon a loss of the first feedback signal the controller generates the control signal to maintain the second DC output to a predefined voltage. Shyr discloses in column 1 lines 59-65 a smart battery which periodically responds to polling (i.e. feedback signals are not always present). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury method and utilize a smart battery as taught by Shyr, since periodically sending a feedback signal is more efficient.

As to Claim 17, see remarks for claim 16. A smart battery is capable of sending a signal indicating the voltage required and receiving that voltage back. If the signal is no longer present the battery will still be receiving that voltage.

As to Claim 19, Shyr discloses wherein the first feedback signal is received from the load (Column 1, lines 63-65)

As to Claim 20, Shyr discloses a smart battery, which would inherently have a controller for the gathering and transmitting the status and requirements of the battery.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular in view of Ostergaard as applied to claim 12 above, and further in view of Shyr.

As to Claim 21, Sainsbury, Hatular and Ostergaard discloses all the limitations of claim 12, as described above. Neither Sainsbury nor Hatular nor Ostergaard expressly disclose wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal, a digital signal superimposed on another analog signal, or an SMBus signal. Shyr expressly disclose Column 6, lines 60-65 wherein the first feedback signal is received as a SMBus signal.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatular in view of Sainsbury in view of Shyr.

Hatular expressly discloses in figure 1 element 26, an information handling system comprising:

A processor; (inherent to an information handling system)

A system bus; (inherent to an information handling system)

A memory coupled to the processor through the system bus (inherent to an information handling system) (Column 5, Lines 34-40); and

A power supply system operable to provide power to the processor, the bus and memory, the power supply system being connectable to an alternating current (AC) power source, wherein the power supply system includes (Column 5, lines 24-29):

A buck converter module (Element 60) operable to receive the first DC output and generate a second DC output.

Hatular does not expressly disclose a rectifier module for receiving the AC input and generate DC output, a control module for receiving feedback signals and controlling the output of the buck converter.

Sainsbury expressly discloses a rectifier module (Figure 4, Element 29) operable to receive the AC input and generate a first direct current (DC) output; an AC-DC adapter (figure 3, element 22); a control module (Figure 5) included in the AC-DC adapter (figure 3, element 22) and operable to receive the first feedback signal (Vsense) input indicative of a target voltage required and a second feedback signal (Vsel) input indicative of the second DC output (Column 5 lines 1-2), the controller adjusting the control signal responsive to the first and second feedback signal inputs (Figure 4, Elements 32, 33, 34), the adjusting of the control signal causing the second DC output to be within a predefined range of the target voltage (Column 4, lines 62-66). Neither Sainsbury nor Hatular expressly disclose wherein the second DC output being measured instantly prior to a loss of the external feedback signal, or where the target voltage is being transferred to an AC-DC adapter as an external feedback signal). Shyr discloses in column 1, lines 59-65, a smart battery which periodically responds to polling (i.e. feedback signals are not always present). Shyr further teaches an AC-DC

converter that is external to the device it is powering (Column 7, lines 13-16). Further it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. ***In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961).*** It would have been obvious to a person having ordinary skill in the art at the time of this invention to modify Hatular's computer system and Sainsbury's controller module and measure the DC output prior to the loss of the feedback signal in order to reduce the power consumption, and thus improve efficiency. It further would have been obvious to separate Hatular and Sainsbury's AC to DC converter from their control module as taught by Shyr in order to reduce the housing size, which thus would yield the feedback signal to the AC to DC converter be an external signal.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatular in view of Sainsbury in view of Gorbet et al. (US 5,941,714).

Hatular expressly discloses in figure 1 element 26, an information handling system comprising:

A processor; (inherent to an information handling system)

A system bus; (inherent to an information handling system)

A memory coupled to the processor through the system bus (inherent to an information handling system) (Column 5, Lines 34-40); and

A power supply system operable to provide power to the processor, the bus and memory, the power supply system being connectable to an alternating current (AC) power source, wherein the power supply system includes (Column 5, lines 24-29):

A buck converter module (Element 60) operable to receive the first DC output and generate a second DC output.

Hatular does not expressly disclose a rectifier module for receiving the AC input and generate DC output, a control module for receiving feedback signals and controlling the output of the buck converter.

Sainsbury expressly discloses a rectifier module (Figure 4, Element 29) operable to receive the AC input and generate a first direct current (DC) output; an AC-DC adapter (Figure 3, element 22) a control module (Figure 5) included in the AC-DC adapter (Figure 3, element 22) and operable to receive the first feedback signal (Vsense) input indicative of a target voltage required and a second feedback signal (Vsel) input indicative of the second DC output (Column 5 lines 1-2), the controller adjusting the control signal responsive to the first and second feedback signal inputs (Figure 4, Elements 32, 33, 34), the adjusting of the control signal causing the second DC output to be within a predefined range of the target voltage (Column 4, lines 62-66). Neither Hatular nor Sainsbury expressly discloses wherein the predefined range includes a minimum value slightly above 100% of the target voltage and a maximum value slightly below 125% of the target voltage. Gorbet teaches that applying a higher voltage level than is required may be desirable in order to ensure proper power transmission to a processor whose mechanical connection may be less than ideal (Column 5, lines 19-25). It has also been held that where the general conditions of a claim are discloses in the prior art, discovering the optimum or working ranges involve only routine skill in the art. ***In re Aller, 105 USPQ 233.*** It would have been obvious to a person having

ordinary skill in the art at the time of this invention to supply the process with a voltage which has a minimum value slightly above 100% of the target voltage and a maximum value slightly below 125% of the target voltage, since Gorbet teaches applying a higher voltage than is needed in order to ensure that the device is receiving at least the required voltage.

Response to Arguments

1. Applicant's arguments with respect to claims 1,12, 22, and 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

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PRIMARY EXAMINER